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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/054,328	01/21/2002	Alfred A. Margaryan		8109

7590 11/18/2003

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EXAMINER

BOLDEN, ELIZABETH A

ART UNIT	PAPER NUMBER
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1755

DATE MAILED: 11/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/054,328

Examiner

Elizabeth A. Bolden

Applicant(s)

MARGARYAN, ALFRED A.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 August 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-16 and 18-29 is/are pending in the application.
- 4a) Of the above claim(s) 13-15 and 27-29 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11 is/are allowed.
- 6) ☒ Claim(s) 1,2,4-10,12,16 and 18-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Any rejections and or objections, made in the previous Office Action, and not repeated below, are hereby withdrawn.

Examiner's Comment

The Examiner would like to clarify for the record that while there are multiple methods for determining the dopant component of a glass, two are most commonly used. In the first method, the entire glass composition, including the dopant, is figured in terms of either weight or mole percent and total 100 %. In the second method, the base glass composition equals 100 mol % and the dopant component, which is measured in weight percent, is calculated from the total weight of 100 mole percent of the base glass. Therefore, the resultant doped glass consist of 100 wt% of the base glass plus the weight percent of the dopant. It appears to the Examiner that the instant application is written with respect to the second method; wherein the base glass should total 100 mol% and the dopant is in terms of weight percent of the base glass. The Examiner has based the prosecution of the instant application on this assumption. The Examiner appreciates the Applicant's past and future efforts to amend the claims in accordance with this determination.

Specification

The amendment filed 29 August 2003 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall

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introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows:

The amendment to Table II results in the table being new matter. The examples have had the mol% values in the $\text{BaF}_2 + \text{RF}_x$ column of the table changed which results in the base glass composition now comprising 100 mol% of glass. While this amendment clarifies to one of ordinary skill in the art that the dopant component, which is terms of weight percent is calculated from the total weight of base glass, the specification does not support the specific changes to the examples in Table II. On page 9, lines 9-12, of the amendment filed 29 August 2003, Applicant's states that the amendment to the table is to correct a clerical error. However, MPEP 2136.07 states:

"An amendment to correct an obvious error does not constitute new matter where one skilled in the art would not only recognize the existence of error in the specification, but also the appropriate correction. In re Oda..."

While the changes to the table are within the scope of the ranges defined by the original specification, it is unclear how one of ordinary skill in the art would have known that the unidentified 2% from the first eight examples should have been added to the $\text{BaF}_2 + \text{RF}_x$ component rather than $\text{Ba}(\text{PO}_3)_2$, $\text{Al}(\text{PO}_3)_2$, or an unspecified component. Therefore, the amendment constitutes new matter.

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Rejections - 35 USC § 112

Claims 12, 16, 24, 25 and 26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: whether the dopant is in terms of weight or mole %. For the purposes of examination the dopant is assumed to be in terms of weight percent.

Claims 16 and 24 are directed to a barium fluorophosphates glass defined by component ranges. If one of ordinary skill in the art selected the minimum values for each of the metaphosphates and the maximum for the fluoride the base glass components would total over 100 mol%. This renders the claims indefinite since it is not clear from the specification that the base glass can comprise more than 100 mol%. For example in claim 24: 10 mol % $\text{Ba}(\text{PO}_3)_2$ + 5 mol % $\text{Al}(\text{PO}_3)_2$ + 90 mol % $(\text{BaF}_2 \text{ and } \text{RF}_x) = 105 \text{ mol \% base glass}$.

Claims 25 and 26 are directed to a barium fluorophosphates glass comprising 10 mol% $\text{Ba}(\text{PO}_3)_2$, 18 mol% $\text{Al}(\text{PO}_3)_3$, 80 mol% $\text{BaF}_2 + \text{RF}_x$, and a dopant of either 5 mol% Nd_2O_3 or 10 mol% Er_2O_3 . The base glass components total 108 mol%, which renders the claims indefinite since it is not clear from the specification that the base glass can comprise more than 100 mol%.

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Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 4, 6, 7, 16-18, 20, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tran, U.S. Patent 5,809,199.

Tran teaches a fluorophosphate glass having overlapping ranges of components with instant claims 1, 2, 4, 6, 7, 16, 18, 20, and 21. See column 3, lines 34-57.

Tran differs from the instant invention by not teaching the rare earth component in terms of weight percent. However, it appears that if the rare earth component were converted to weight percent in accordance with the instant invention, the rare earth component of Tran would overlap the dopant component of the instant invention. Overlapping ranges have been held to establish *prima facie* obviousness. See MPEP 2144.05.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have selected from the overlapping portion of the ranges taught by the reference because overlapping ranges have been held to establish *prima facie* obviousness. See MPEP 2144.05.

Claims 1, 2, 4-10 and 16, 18-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki et al., U.S. Patent 5,755,998.

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Yamazaki et al. teach a fluorophosphates glass having overlapping ranges of components with instant claims 1, 2, 4-10, 16, and 18-24. See column 3, lines 34-57.

Yamazaki et al. differ from the instant invention by not teaching the glass composition in terms of glass forming components but rather in terms of atoms for making up the glass.

Yamazaki et al. also differs from the instant invention by teaching the rare earth component in terms of weight percent. However, it appears that if the composition were converted to glass forming component mole % and the rare earth component were converted to weight percent in accordance with the instant invention, the composition and the rare earth component of Yamazaki et al. would overlap the dopant component of the instant invention. Overlapping ranges have been held to establish *prima facie* obviousness. See MPEP 2144.05.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have selected from the overlapping portion of the ranges taught by the reference because overlapping ranges have been held to establish *prima facie* obviousness. See MPEP 2144.05.

Claims 1, 2, 4-6, 8, 9, 16, 18-20, and 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kodama, U.S. Patent 4,386,163.

Kodama teaches a fluorophosphates glass comprising 13-39 wt% of $\text{Al}_2(\text{PO}_3)_3$, 5-19 wt% $\text{Ba}(\text{PO}_3)_2$, 0-24 wt% $\text{Mg}(\text{PO}_3)_2$, 1-20 wt % $\text{Ca}(\text{PO}_3)_2$, 0-8 wt% AlF_3 , 2-13 wt% MgF_2 , 0-20 wt% SrF_2 , 1-33 wt% BaF_2 , 0-8 wt% YF_3 , 10-36 wt% BaO , 1.5-12 wt% Y_2O_3 and/or Yb_2O_3 , 0-6 wt% ZnO , 0-29 wt% PbO , 0-22 Nb_2O_5 . See abstract of Kodama.

The reference differs from the claims by defining the ranges on a weight percent basis rather than a molecular percent basis.

A theoretical composition in weight percent of 22 wt% $\text{Al}_2(\text{PO}_3)_3$, 19 wt% $\text{Ba}(\text{PO}_3)_2$, 1 wt% $\text{Ca}(\text{PO}_3)_2$, 2 wt% MgF_2 , 6 wt% SrF_2 , 30 wt% BaF_2 , 10 wt% BaO , 5 wt% Y_2O_3 , and 5 wt% Yb_2O_3 is equivalent to the composition in terms of mole percent of 16.6 mol% $\text{Al}_2(\text{PO}_3)_3$, 12.8 mol% $\text{Ba}(\text{PO}_3)_2$, 1 mol% $\text{Ca}(\text{PO}_3)_2$, 6.4 mol% MgF_2 , 9.5 mol% SrF_2 , 34 mol% BaF_2 , 12.9 mol% BaO , 4.4 mol% Y_2O_3 , and 2.5 mol% Yb_2O_3 . This theoretical composition shows that some amount of overlap exists between the reference and the instant claims.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a fluorophosphates glass of Kodama because a composition, which is encompassed in the ranges of Kodama, is also included in the ranges of the instant invention.

Response to Arguments

Applicant's arguments filed 29 August 2003 have been fully considered but they are not persuasive.

The Applicant argues that Tran, U.S. 5,809,199 further contains the light metal fluoride, AlF_3 and NaPO_3 . This argument is not deemed persuasive because the Applicant's present claims do not limit the amount of AlF_3 and NaPO_3 in the composition.

Furthermore, the Applicant uses "comprising" terminology, which allows for the addition of other components even in major amounts. See MPEP 2111.03, which states:

The transitional term "comprising", which is synonymous with "including," "containing," or "characterized by," is inclusive or open-ended and does not exclude additional, unrecited elements or method steps.

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The Applicant argues that the glasses of Tran contain soluble components and that the instant invention claims fluorophosphates glasses that have high chemical durability. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., chemical durability) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Furthermore, Tran discloses that the glass has a high chemical durability and low solubility in water. See column 3, lines 59-61. While Applicant states that the components of Tran indicate degradation of the chemical durability and solubility, no evidence contrary to the disclosure by Tran has been provided.

The Applicant argues that Yamazaki et al., U.S. 5,755,998 further contains SrF_2 . This argument is not deemed persuasive because the Applicant's present claims do not limit the amount of SrF_2 in the composition.

Furthermore, as noted above, the Applicant uses "comprising" terminology, which allows for the addition of other components even in major amounts. See MPEP 2111.03.

Applicant argues that Yamazaki et al. disclose $\text{Ba}(\text{PO}_3)_2$ as a minor ingredient as shown in the examples of Yamazaki et al. However, this is not deemed persuasive since the reference is not limited to the examples alone for disclosure. See MPEP 2123.

The Applicant argues that the glasses of Kodama, U.S. 4,386,163, further contains $\text{Ca}(\text{PO}_3)_2$, BaO , and the following optional components: AlF_3 , SrF_2 , YF_3 , $\text{Mg}(\text{PO}_3)_2$, Y_2O_3 , ZnO ,

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PbO, and Nb₂O₅. This argument is not deemed persuasive because the Applicant's present claims do not limit the amount of BaO, Ca(PO₃)₂, and optional components in the composition.

Furthermore, the Applicant uses "comprising" terminology, which allows for the addition of other components even in major amounts. See MPEP 2111.03.

In response to Applicant's argument that the references fail to show certain features of Applicant's invention, it is noted that the features upon which Applicant relies (i.e., high refractive index and transmission in the rear IR region due to the presence of the heavy metal fluorides) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Allowable Subject Matter

Claim 11 is allowed.

The following is an examiner's statement of reasons for allowance: The prior art fail to disclose or suggest a barium fluorophosphate glass comprising 10 mol% Ba(PO₃)₂, 18 mol% Al(PO₃)₃, 72 mol% BaF₂, and 10 mol% of a dopant.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth A. Bolden whose telephone number is 703-305-0124. The examiner can normally be reached on 9:30 am-7:00 pm with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark L. Bell can be reached on 703-308-3823. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

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After the move to the new USPTO headquarters in Alexandria, Virginia, tentatively scheduled for the week of December 22, 2003, the examiner's new phone number will be (571) 272-1363 and Mark Bell's new phone number will be (571) 272-1362.

A handwritten signature in black ink, appearing to read "David Sample", with a stylized flourish extending to the right.

DAVID SAMPLE
PRIMARY EXAMINER

EAB

16 November 2003